

Abstract:

The present invention relates to electrical separators for batteries, especially lithium batteries, having a shutdown mechanism and also a process for their production.

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An electrical separator is a separator which is used in batteries and other systems in which electrodes have to be separated from each other while maintaining ion conductivity for example. Safety is very important in lithium batteries, since in contrast to other types of battery (Pb, NiCd, NiMeH) the solvent for the electrolyte is not water but a combustible solvent, for
10 example organic carbonates. This is why it is absolutely necessary for a separator for lithium cells to possess a suitable shutdown mechanism and at the same time for it not to be able to melt down.

This object is achieved by an electrical separator according to the invention that comprises a
15 shutdown layer which consists of particles which melt at a desired temperature, close the pores of the separator and so stop ion flow. Since the separator also comprises a porous inorganic (ceramic) layer on a carrier, the cells cannot melt down as a result of a completely melted separator.